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TABLE OF CONTENTS

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The 1983 Peregrine Falcon/Raptor Survey along the Utukok and Sagavanirktok Rivers

by James B. Silva

FIGURES

- Figure 1. Index Map of the Study Area, Alaska
- Figure 2. Aerial Photograph Along the Sagavanirktok River, the Utukok Mountains, Alaska
- Figure 3. Aerial Photograph Along the Utukok River, Alaska

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TABLE OF CONTENTS

Introduction..... 1

Objectives..... 1

Study Area and Methods..... 1

Results..... 5

Discussion..... 7

Recommendations..... 8

Acknowledgements 9

Literature Cited 10

Appendix 11

FIGURES

Figure 1. Index Map of the Arctic Resource Area..... 2

Figure 2. Areas Surveyed along the Sagavanirktok River
and Slope Mountain, Alaska..... 4

Figure 3. Areas Surveyed along the Utukok River, Alaska.. 6

INTRODUCTION

The 1983 peregrine falcon (Falco peregrinus tundrius) nesting survey was a continuing effort to visit active and historic peregrine falcon nesting sites within the Arctic Resource Area (ARA), Alaska (Figure 1).

Raptor surveys within the ARA have been conducted for many years: White and Cade (1971), White and Boyce (1978), Ambrose (1980), Dittrick and Swem (1981), Ritchie (1981), Ritchie and Craighead (1982), Swem, Dittrick and Silva (1983) and Dittrick and Moorehead (1983). The Colville and Sagavanirktok Rivers have been annually surveyed by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM) since the mid 1970s. A portion of the Sagavanirktok River is also under a BLM Habitat Management Plan for peregrine falcons which was implemented in 1979. In addition, many other areas within the ARA are periodically surveyed when funding and manpower is available.

The 1983 BLM survey concentrated on the Utukok and Sagavanirktok Rivers. The results of the nesting survey, including cliff locations, banding data and raptor nesting success, are included in this report.

OBJECTIVES

- To locate and document peregrine falcon and other raptor use of the Utukok and Sagavanirktok Rivers within the Arctic Resource Area.
- To compare 1983 data along the Sagavanirktok River to previous years data to determine trend.
- To locate and document use of nest sites (Current and Historic) and band young peregrine falcons when possible.
- To conduct surveys with as minimal raptor disturbance as practical, and to document responses.

STUDY AREA AND METHODS

Study Area

The study area included all historic peregrine falcon nest sites and probable nesting areas along the Utukok River downstream approximately 250 km., from the Driftwood airstrip, and selected areas along the Sagavanirktok River drainage, specifically Franklin and Sagwon Bluffs and Slope Mountain (Figures 2 & 3).

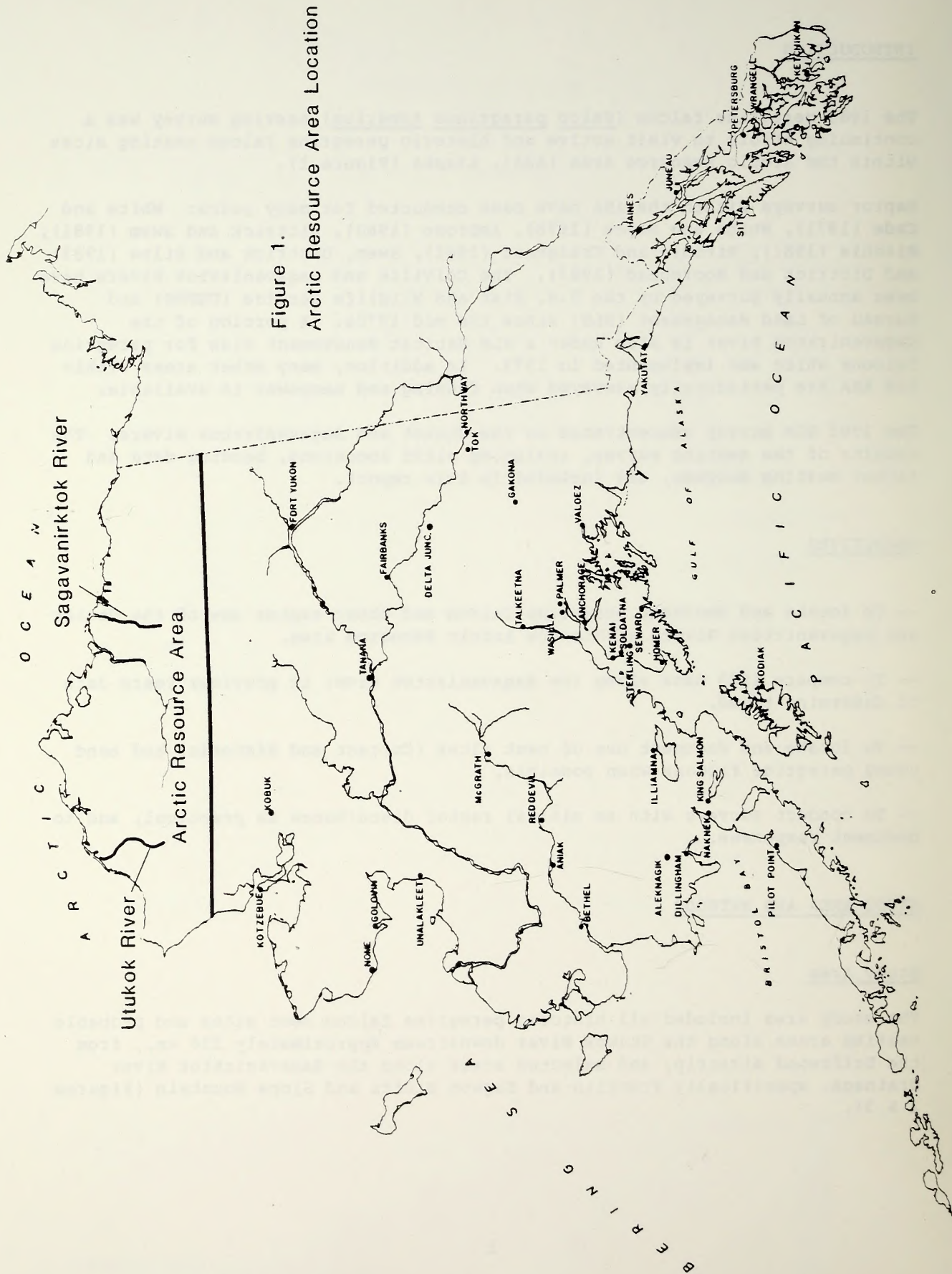


Figure 1.
Arctic Resource Area Location

Sagavanirktok River

Two surveys were conducted along the Sagavanirktok River and Slope Mountain during 1983 (Figure 2). The first survey from June 10 - 13, documented the presence of adult raptors and potential nest locations. The second survey July 26 - 30, was designed to check nesting success and band young birds. Peregrine falcons, gyrfalcons (Falco rusticolus), rough-legged hawks (Buteo lagopus) and ravens (Corvus corax) were observed at 19 locations along the Sagavanirktok River and Slope Mountain (See results section for details).

Utukok River

One survey was conducted along the Utukok River from June 20 - 30, 1983. Approximately 250 km. of river were surveyed beginning at the Driftwood airstrip (Figure 3). The survey was designed to check historic nesting sites for peregrine falcon occupancy. Gyrfalcons, rough-legged hawks, golden eagles (Aquila chrysaetos) and ravens were observed at 28 locations along the Utukok River (See results section for details).

Methods

Three primary methods were utilized to survey the Utukok and Sagavanirktok Rivers.

1. Floating: Access to nesting locations along the Utukok and Sagavanirktok Rivers was gained primarily by using a 12 foot Avon inflatable raft equipped with a 7 h.p. motor. This type of access has proven to be the most effective census technique within the ARA. Floating allows a relatively unobtrusive approach to each cliff location creating a minimum of disturbance.
2. Vehicles: Several areas along the Sagavanirktok River and Slope Mountain, because of their proximity to the Dalton Highway, can be surveyed with access provided directly by ground vehicles.
3. Hiking: Hiking was used to survey areas that were not immediately adjacent to the Utukok and Sagavanirktok Rivers, and along areas that were generally more than 1/2 mile from road access by vehicles.

A Cessna 207 was used for transportation to the Utukok River and a ground vehicle was used for transportation to the Sagavanirktok River.

Observations were made with a spotting scope and binoculars. All suitable habitat along the survey routes were searched for stick nests, whitewash and for the presence of raptors.

The methods and techniques used to survey the Sagavanirktok River from Sagwon Bluffs to Franklin Bluffs, were comparable to those used in previous surveys. This allows a comparison of the 1983 nesting data on peregrine falcons with data from previous surveys (Table 1).

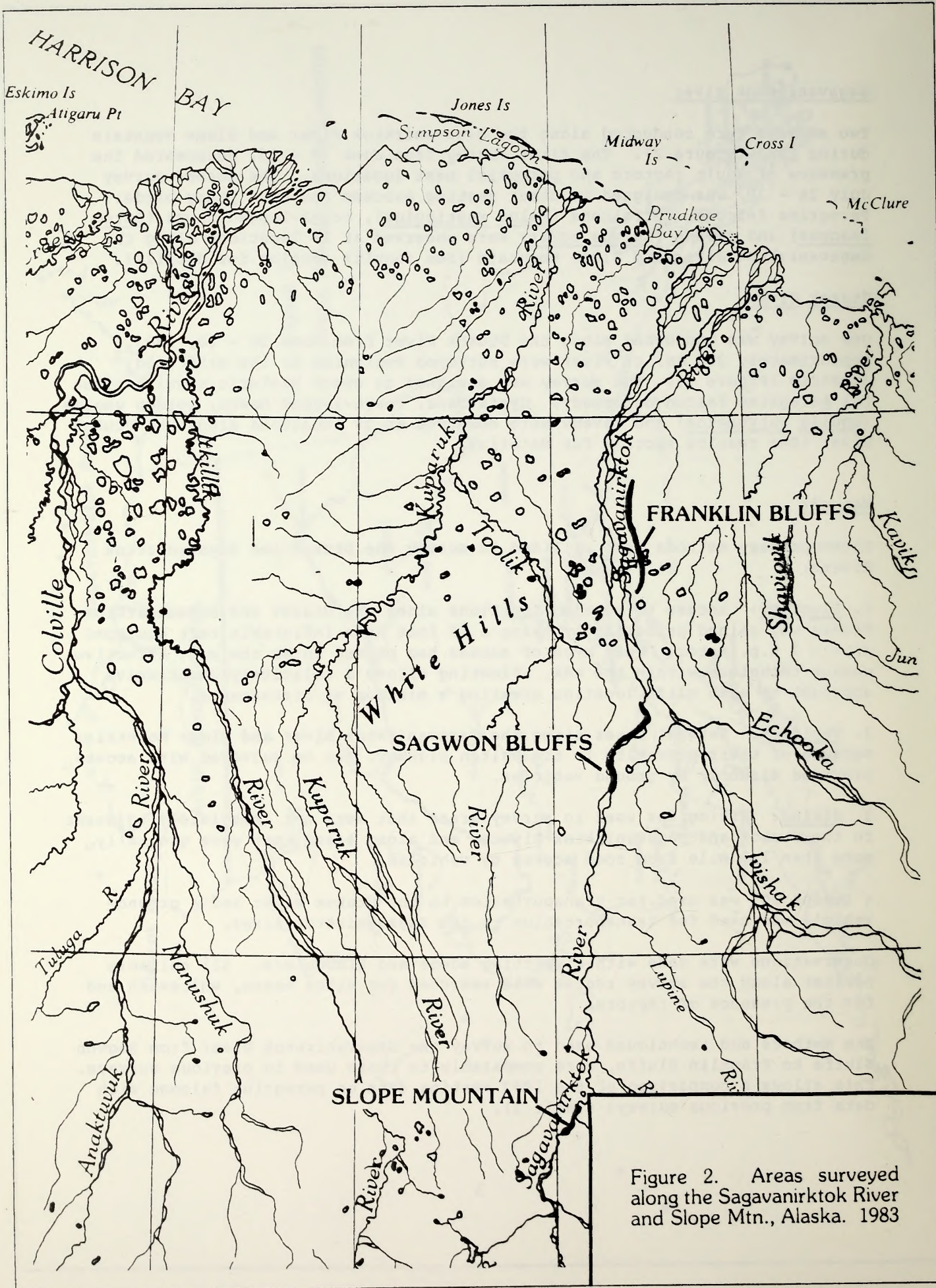


Figure 2. Areas surveyed along the Sagavanirktok River and Slope Mtn., Alaska. 1983

RESULTS

Peregrine Falcons

The location and nesting success of all peregrine falcons observed are shown in Table 2. There were 13 peregrine falcon young observed during the survey, of which eight were banded (Table 3). During the banding operations, the adult behavioral responses were documented (Table 4).

In 1983 peregrine falcons were present at six locations along the Sagavanirktok River and Slope Mountain. Five locations had nesting pairs, with a single adult present at the remaining location. All five pairs were successful, and produced 13 young, averaging 2.6 young per nesting pair.

No peregrine falcons were located at any of the historic nesting locations along the Utukok River. It appears that the increase in young produced along the Colville River in recent years have not yet begun to reestablish themselves within the Utukok drainage during 1983.

Gyrfalcons

The locations of all gyrfalcons observed along the Utukok and Sagavanirktok Rivers are listed in Table 5. No gyrfalcons were banded during this survey.

Gyrfalcons were present at two locations, one pair on the Utukok River, and one pair on the Sagavanirktok River. Both pairs appeared to be either incubating eggs and/or brooding young during the survey, with the pair on the Utukok River having at least one young present.

The gyrfalcon nest along the Sagavanirktok River was within a hundred yards of a peregrine falcon eyrie, two rough-legged hawk nests and a raven nest. The adult incubating did not leave the nest or give any vocal response during the observation. The second adult that was flying over the cliff area just prior to stopping at the cliff, flew away and did not give any vocal response. The gyrfalcon adults at the nest site on the Utukok River responded the same as those along the Sagavanirktok River. The adult incubating did not leave the nest or make any vocal sounds, and the second adult left the area without making any vocal sounds.

Rough-legged Hawks

The location of all rough-legged hawks observed during the survey are listed in Table 5. No rough-legged hawks were banded during the survey.

Rough-legged hawks were observed at 26 locations, 10 along the Sagavanirktok River and 16 along the Utukok River. Pairs appeared to be either incubating eggs and/or brooding young at 22 of the locations, of which seven had produced at least 17 young as of the time of the survey.

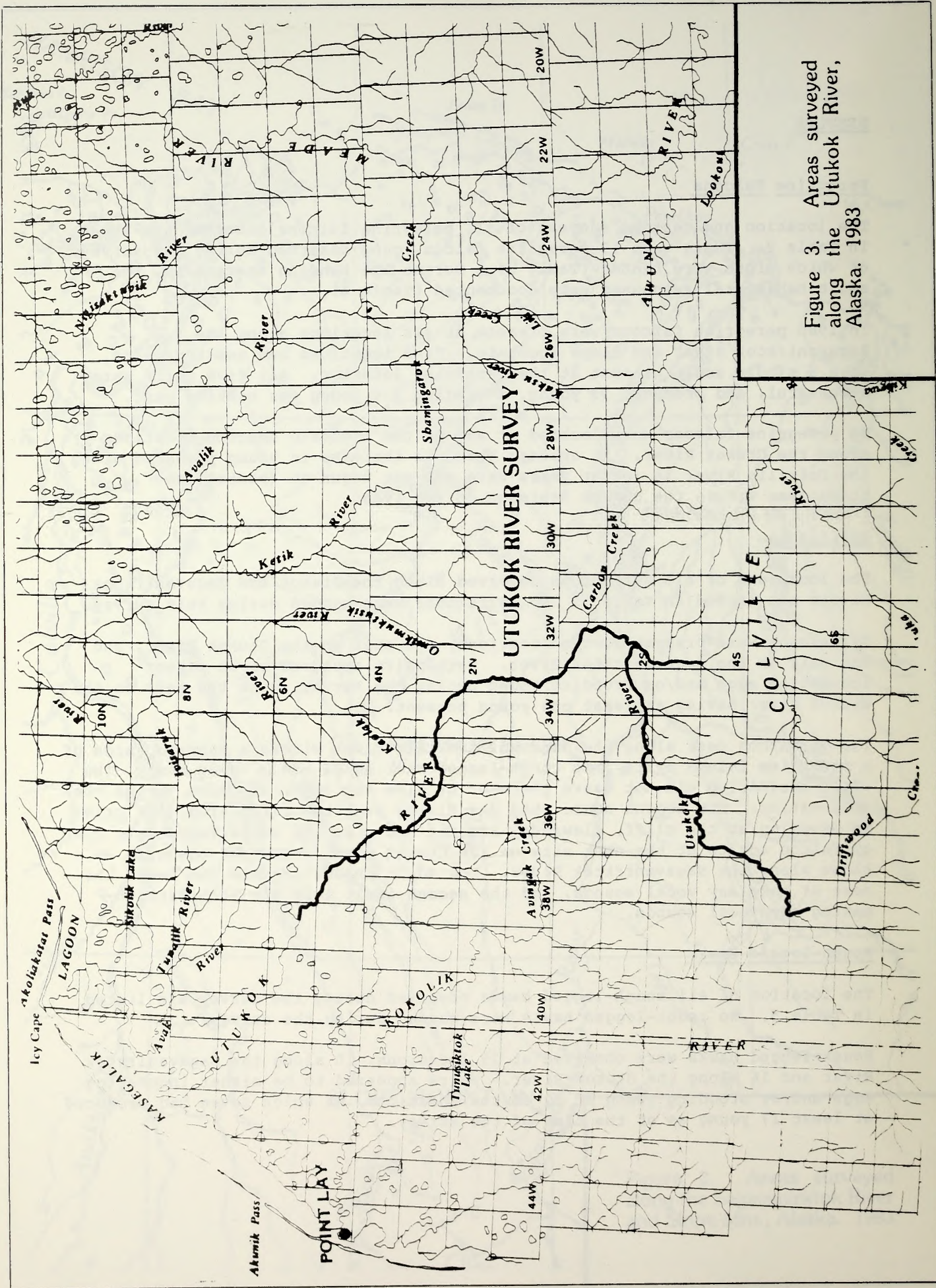


Figure 3. Areas surveyed along the Utukok River, Alaska. 1983

Golden Eagles

The locations of all golden eagles observed during the survey are listed in Table 5. No golden eagles were banded during the survey.

Golden eagles were present at ten locations along the Utukok River. Three locations had pairs present, six locations had single adults, and a single immature bird was observed at one location. Two of the three pairs were successful in producing young, with at least one young in each nest during the time of the survey.

Ravens

Ravens, although not classified as a raptor, use very similar nesting habitat and prey species within the ARA. During this survey, in addition to collecting data on all raptors observed, data were also collected on ravens and is listed in Table 5. No ravens were banded on this survey.

Ravens were observed at three locations, one pair along the Utukok River and two pair along the Sagavanirktok River. All three pair appeared to be either incubating eggs or brooding young during the survey.

DISCUSSION

Sagavanirktok River

The productivity of the peregrine falcon population along the Sagavanirktok River continues to show encouraging growth trends in 1983 (Table 1). There was a dramatic increase in the number of young produced per total nesting pair from .67 in 1982 to 2.6 in 1983. The number of young produced increased from four in 1982 to 13 in 1983. There was an increase in nesting success in 1983 (five nests) over 1982 (two nests), and a drop in the percentage of pairs which did not produce young from 66% in 1982 to 0% in 1983. The ratio of 2.6 young per total nesting pair in 1983 was the highest ever recorded along the Sagavanirktok River. This productivity was substantially higher than the 1.4 ratio considered normal for a healthy population of tundra peregrine falcons (USFWS 1982). However, until a trend can be shown over the next several years, it should not be assumed that this high level of fecundity will continue.

Utukok River

There were no peregrine falcons located along the Utukok River during this survey. This absence of peregrine falcons is very discouraging because of the proximity of the Colville River. The productivity along the Colville River has shown rising trends over the last several years (Table 6), which has fostered hope that some of this increase would spread to other rivers where historical nesting has occurred.

The 1983 survey does not rule out the possibility of peregrine falcons occurring along the Utukok River due to the fact that not all raptors are located along any river during any one survey. However, in 1982 a number of the highest potential and historically used cliffs along the Utukok River and Carbon Creek were surveyed with no peregrine falcons present at any of these cliffs.

It appears that if there are peregrine falcons present along the Utukok River, they are still in very limited numbers and have not yet reoccupied many of the historical nest locations. Hopefully, in the near future if the Colville River population continues to increase, some of those birds will begin to expand their nesting habitat into the Utukok River drainage.

RECOMMENDATIONS

Because of the continuing potential of oil and gas exploration and development activities, surveys to identify new raptor nest sites and monitor existing and historic sites should be continued.

The Colville River (Etivluk River to Ocean Point) and the Sagavanirktok River are the core areas for the peregrine falcon population within the Arctic Resource Area. Because these rivers are so important, they should be monitored each year to determine the status of the peregrine falcon population on the north slope. Other rivers that have been historically used and rivers that provide suitable habitat should be monitored periodically to determine and identify any expansion of the peregrine falcon population on the north slope.

The following rivers in order of priority should be monitored during the 1984 nesting season.

1. Colville River (Etivluk River to Ocean Point) - USFWS.
2. Sagavanirktok River drainage (including Slope Mtn.) - BLM.
3. Upper Colville River (Nuka River to Etivluk River) - BLM.

During future years, in addition to monitoring the Colville and Sagavanirktok Rivers, the following rivers should be surveyed to the greatest extent possible.

- | 1985 | 1986 |
|-----------------------------------|------------------|
| 1. Utukok River
(Carbon Creek) | 1. Kiligwa River |
| 2. Etivluk River | 2. Nuka River |
| | 3. Ipnarik River |

All surveys would use helicopter and/or fixed wing access, with rafts and hiking as the mode for ground transportation.

ACKNOWLEDGEMENTS

I wish to thank Mr. Jim Gilliam for his help in logistical support and data collection on the Sagavanirktok River portion of this survey, and Jack Mellor for his help in data collection on the Utukok River. The final report was typed by Bea Bethune.

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APPENDIX
 (Tables 1-6)

1. ...
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 3. ...
 4. ...

TABLE 1: Comparison of peregrine falcon (Falco peregrinus tundrius) productivity along the Sagavanirktok River, Alaska (Franklin and Sagwon Bluffs) 1980-83.

<u>Year</u>	<u>1980¹</u>	<u>1981¹</u>	<u>1982¹</u>	<u>1983</u>
<u>Total No. of Pairs</u>	3	4	6	5
<u>Lone Adults</u>	0	0	0	1
<u>No. of Pairs with Young</u>	2	3	2	5
<u>No. of Young Observed</u>	2	8	4	13
<u>Young per Total Pairs</u>	.67	2	.67	2.6

1. Data from Ritchie and Craighead 1982.

TABLE 2: Nest locations and nesting success of peregrine falcons (Falco peregrinus tundrius) along the Sagavanirktok River, Alaska. 1983.

<u>Cliff Location</u> ¹	<u>Adults</u> ²	<u>Nest Attempt</u> ³	<u>Young</u> ⁴	<u>Remarks</u>
South Sagwon (Km 144.5)	2	Yes	3	
North Sagwon (Km 159.5)	2	Yes	4	
Bruce (A) (Km 200)	2	Yes	4	
Bruce (B) (Km 203.5)	1(2)	Yes	1	
Greta (Km 207.5)	1	?	NC	Did not check during July survey.
Slope Mtn.	2	Yes	1	

1. Cliff location: (Names) taken from Ritchie and Craighead 1982, (Kilometer mileage) taken from Ambrose 1983.

2. Adults: Number of adults observed. Number in parenthesis is number of adults implied, e.g. - 1(2) denotes one adult observed, but the presence of young implies that a second adult was temporarily absent at the time of observation.

3. Nesting attempt: Yes - eggs, young or incubating adult was seen.
? - nesting attempt never verified.

4. Young: Number - Number of young counted.
NC - Not Censused.

TABLE 3. Peregrine falcons (Falco peregrinus tundrius) banded on the Sagavanirktok River, Alaska. 1983.

<u>Cliff Location</u> ¹	<u>Band No.</u>	<u>Date</u>
South Sagwon (Km 144.5)	987-62485	26 July
	987-62486	26 July
	987-62487	26 July
Bruce (A) (Km 200)	987-62488	29 July
	987-62489	29 July
	987-62490	29 July
	987-62491	29 July
Bruce (B) (Km 203.5)	987-62492	29 July

1. Cliff location: (Names) taken from Ritchie and Craighead 1982, (Kilometer mileage) taken from Ambrose 1983.

TABLE 4. Adult behavioral response to aerie visits on the Sagavanirktok River, Alaska, 1983.

Cliff Location ¹	Duration of Disturbance	Male Response	Female Response	Remarks
South Sagwon (Km 144.5)	30 Min.	soaring, vocal	soaring, vocal	one person in nest
Bruce (A) (Km 200)	40 Min.	soaring, vocal	soaring, vocal	one person in nest
Bruce (B) (Km 203.5)	25 Min.	soaring, vocal, 10-15 stoops	absent	one person in nest

1. Cliff location: (Names) taken from Ritchie and Craighead 1982, (Kilometer mileage) taken from Ambrose 1983.

TABLE 5. Nest locations and nesting success of all raptors/ravens excluding Peregrine falcons.

<u>Cliff Location</u> ¹	<u>Species</u> ²	<u>Adults</u> ³	<u>Nesting</u> ⁴ <u>Attempt</u>	<u>Young</u> ⁵	<u>Remarks</u>
(Sagavanirktok River)					
South Sagwon (Km 144.5)	RL	2	Yes	1	
South Sagwon (Km 145.5)	RL	2	?	NC	
Middle Sagwon (Km 147)	RL	1(2)	Yes	NC	
Middle Sagwon (Km 147.5)	R	2	Yes	NC	
Middle Sagwon (Km 148)	RL	2	?	NC	
Middle Sagwon (Km 150)	RL	2	Yes	NC	
Middle Sagwon (150.5)	RL	2	Yes	NC	
North Sagwon (Km 158)	RL	2	Yes	NC	
North Sagwon (Km 159)	R	2	Yes	NC	
North Sagwon (Km 159.5)	G	2	Yes	1	at least one chick present
North Sagwon (Km 159.5)	RL	2	Yes	NC	
North Sagwon (Km 159.5)	RL	2	Yes	NC	
South Franklin (Km 197)	RL	2	Yes	0	three eggs

TABLE 5. (Cont.)

<u>Cliff Location</u>			<u>Species</u>	<u>Adults</u>	<u>Nesting Attempt</u>	<u>Young</u>	<u>Remarks</u>
(Utukok River)							
T.	R.	Sec.					
5S	38W	4	RL	2	?	NC	
5S	39W	29	GE	1	?	NC	
"	"	34	GE	2	?	NC	
4S	37W	2	GE	1	?	NC	
"	"	5	G	2	Yes	1	at least one chick present
"	"	8	RL	2	Yes	NC	
3S	36W	20	GE	1	?	NC	two old stick nests
2S	36W	34	GE	2	Yes	1	
"	"	35	GE	1	?	NC	one old stick nest
2S	35W	27	RL	2	Yes	2	
"	"	30	RL	2	Yes	3	
2S	33W	10	RL	2	?	NC	
"	"	11	RL	2	Yes	NC	
"	"	15	RL	1(2)	Yes	NC	
"	"	17	GE	1	?	NC	two old sticks nests
"	"	21	GE	2	Yes	1	at least one chick present
1S	34W	2	RL	2	Yes	3	
1S	33W	14	RL	2	Yes	2	

TABLE 5. (Cont.)

<u>Cliff Location</u>			<u>Species</u>	<u>Adults</u>	<u>Nesting Attempt</u>	<u>Young</u>	<u>Remarks</u>
T.	R.	Sec.					
1N	33W	29	GE	1	?	NC	one old stick nest
2N	33W	5	RL	2	Yes	NC	
"	"	8	RL	2	Yes	NC	
"	"	20	RL	2	Yes	0	three eggs
3N	34W	16	RL	2	Yes	0	two eggs
"	"	36	GE	1	No	NC	immature
3N	35W	10	RL	2	Yes	NC	
"	"	10	R	2	Yes	NC	
"	"	17	RL	2	Yes	4	
4N	36W	7	RL	2	Yes	2	one egg

1. Cliff location: (Names) taken from Ritchie and Craighead 1982, (Kilometer mileage) taken from Ambrose 1983.

2. Species Abbreviations:

RL - Rough-legged Hawk (Buteo lagopus)

G - Gyrfalcon (Falco rusticolus)

GE - Golden Eagle (Aquila chrysaetos)

R - Raven (Corvus corax)

3. Adults: Number of adults observed. Number in parenthesis is number of adults implied, e.g. - 1(2) denotes one adult observed, but the presence of young implies that a second adult was temporarily absent at the time of observation.

4. Nesting attempt: Yes - eggs, young or incubating adult was seen.
? - nesting attempt never verified.

5. Young: Number - Number of young counted.

Yes - Young seen but a complete count was not possible

NC - Not Censused.

TABLE 6.1 Comparison of peregrine falcon (*Falco peregrinus tundrius*) productivity along the Colville River, Alaska (Etivluk River to Ocean Point).

Year	1952	1959	1967	1968	1969	1971	1973	1975	1978	1979	1980	1981	1982	1983
Total No. of Pairs	32	36	27	31	33	25	14	10	15	16	21	24	26	26
Lone Adults	5	1	6	1	3	9	5	2	3	5	2	3	3	2
Total No. of Adults	64	77	54	63	66	56	29	23	39	37	44	53	55	54
No. of Pairs with Young	18	16	13	9	9	4	8	6	12	12	12	12	18	16
No. of young observed	34	34	26	14	14	9	14	15	29	31	48	48	52	52
Young per total pair	1.26	1.10	0.79	0.56	0.64	0.93	0.94	1.38	1.29	1.85	2.00	2.00	2.00	2.00

1. Ditttrick and Moorehead (1983).

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